



# THE OSPREY

A Newsletter Published by the Steelhead Committee  
Federation of Fly Fishers



Dedicated to the Preservation of Wild Steelhead • Issue No. 53 • JANUARY 2006

## Wild Salmon, an Economic Resource or a Wild Animal?

by Eric Redman and Sven Brandt-Erichsen  
— Salmon Spawning & Recovery Alliance —

The authors of this article are Eric Redman and Svend Brandt-Erichsen, shareholders with Heller Ehrman LLP, practicing energy and environmental law. Together, they represent the Salmon Spawning & Recovery Alliance, an organization formed to encourage policies that will return more adult salmon and steelhead to the spawning grounds.

**F**or nearly 150 years, Northwest salmon have been viewed as a renewable, and exploitable, resource. They have been allocated among competing interests, Tribal and non-Tribal, U.S. and foreign, commercial and sport, all with a focus on who would get to kill the fish and keep the benefits.

The byproducts of this mindset have included hatcheries and more hatcheries, injustice to Tribes, and persistent overfishing of native salmon. Ultimately, due to these and other abuses, salmon populations throughout the region dwindled.

Almost fifteen years ago, the first

salmon listing occurred under the Endangered Species Act. Today, 26 salmon and steelhead populations in Washington, Idaho, Oregon and

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**Salmon at risk of extinction are no longer a resource to be exploited. Instead, they must be given the same protection as other ESA listed species.**

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California have been identified as "threatened" or "endangered."

What will it take to recover threatened and endangered Northwest salmon and steelhead? If the past is

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## Native Broodstock Hatcheries: No Solution for Salmon Recovery

by Bill Bakke  
— Native Fish Society —

The following article is adapted from a paper by Bill Bakke, of the Native Fish Society, titled "Native Brood Stock Hatcheries are not a Solution for the Recovery and Protection of Wild Salmon and Steelhead." The full text can be found at [www.nativefish-society.or](http://www.nativefish-society.or). Bakke may be reached at [bmbakke@qwest.net](mailto:bmbakke@qwest.net)

**H**atchery reform is gaining momentum in the Northwest following several decades of scientific review of hatchery programs and their effect on native, wild salmonids. The emphasis on hatchery reform has been pushed along by the Endangered Species Act and the listing of most wild salmon and steelhead along the West Coast. Before the ESA-list-

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FROM THE PERCH — EDITOR'S MESSAGE

# Page One Standouts

by Jim Yuskavitch

**J**ust before the design phase of each issue of *The Osprey*, the editor and editorial committee take a look at the slate of articles scheduled for publication to decide what our cover story will be. The criteria for choosing the lead article are varied, and can hinge on a variety of factors, such as the piece's timeliness or if it covers an especially important topic. But every now and then we run into a situation where two articles demand equal recognition.

We have come to that situation in this issue, where two excellent and informative articles demand equal billing, and therefore share space on page one.

The first, by attorneys Eric Redman and Svend Brandt-Erichsen, covers the issue of harvest and the "take" of wild salmon and steelhead that are under the protection of the Endangered Species Act. They say that weak runs are being used by fisheries managers to contribute to harvest, rather than harvest being managed to recover the fish. It is something that has needed to be said for some time now.

In the companion cover story, Native Fish Society executive director Bill Bakke discusses extensively the current drive among fishery managers to use wild broodstock hatcheries as a tool to help recover and protect flagging wild salmon and steelhead runs. His thoughts follow those of the many researchers who find that while wild broodstock may help hatchery fish remain viable, they do little good in saving endangered salmonids.

The remainder of this issue is fleshed out with several other excellent stories, including an overview of the current administration's rollback of critical habitat designations for ESA-listed salmon, steelhead and other species, a piece pondering the idea of using hatcheries to increase wild steelhead runs on British Columbia's Thompson River, news updates on a proposed mining operation in Washington's wild steelhead country and a last-ditch effort to save the Fish Passage Center from extinction.

We're sure that, in this issue, there is something for everyone.

## Letters to the Editor

### September Issue Outstanding

Dear Editor:

For a number of years I have read your newsletter with some interest. I am writing to commend you on the outstanding work in the September issue. First, in reprinting Rocky Barker's article about Don Chapman, which I had not seen. I knew Don Chapman for a long time back and had admiration for him but was always disturbed by what seemed to be a sell-out. Rocky covered the whole subject extremely well.

Second, is the total coverage by Bert Bowler about salmon. Bert knows more about the subject than anyone.

Finally, your own article on Craig's

attempt to eliminate the Fish Passage Center is excellent. You have put it all in place.

The big concentration on Idaho caught my attention.

Scott W. Reed  
Coeur d'Alene, ID

**Thanks!**

Dear Editor:

On behalf of Clark-Skamania Flyfishers I would like to thank you for the excellent job you are doing for our fish.

Ed Wickersham  
Clark-Skamania Fly Fishers

# THE OSPREY



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Submissions may be made electronically or by mail.

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FFF has a long standing commitment to solving fisheries problems at the grass roots. By charter and inclination, FFF is organized from the bottom up; each of its 360+ clubs, all over North America and the world, is a unique and self-directed group. The grass roots focus reflects the reality that most fisheries solutions must come at that local level.





# First, the Bad News . . .

by Bill Redman

— Steelhead Committee —

**F**or this issue of *The Osprey*, there is some good news and some bad news to report. Some might call that progress, given that in today's political environment, good news on steelhead and salmon conservation is often hard to find.

## The Fish Passage Center

First the bad news. As reported in detail by Jim Yuskavitch in the September 2005 issue of *The Osprey*, Senator Larry Craig of Idaho last summer inserted language into the Senate energy bill that would eliminate funding of the Fish Passage Center (FPC), the small organization responsible for gathering and reporting critically important data on steelhead and salmon migrations through the Columbia River hydropower system. In September 2005, the question of whether that language would stay in the final energy bill was still open.

Now we know. The final energy bill passed by Congress in November 2005 eliminated funding of the FPC. The messenger of the facts – which sadly are often that the anadromous fish of the Columbia system are faring poorly in large part thanks to the hydro system – has been shot. Senator Craig, in an act of raw political pique and with the help of a compliant Congress, has done it. It is no accident that he was voted the 2002 “Legislator of the Year” by the National Hydropower Association. With this action Senator Craig has assumed the top rank among what Tom McGuane, in his book “The

Longest Silence,” described as “Idaho’s nature hating politicians.” He and those for whom serious salmon recovery measures in the Columbia system are an inconvenience or worse simply don’t want the facts to be reported regularly. The FPC has provided objective information on the health of the anadromous fish runs since it was instituted; and fish advocates, the states of Oregon and Washington, the tribes, and scientists and agency managers at all levels are outraged at this action.

The legislation does make a commitment to provide a “seamless continuity of activities” to replace what the FPC has been doing. The first and most important requirement for continuing this mission is that it must be

**i n d e p e n d e n t**  
from the action agencies – Bonneville Power Administration and the Corps of Engineers – that control the Columbia hydropower system. These agencies have proven incessantly that salmon recovery is well down on their list of priorities. Funding

from BPA for continuation of this mission is appropriate; management control by BPA is not. The new organization must serve the needs of the scientists and agency managers in the states, tribes, and federal government, and must ultimately be responsible to the public, which wants real salmon recovery.

The nature of the new organization and its funding are now in the hands of BPA and the Northwest Power and Conservation Council. Current funding for the FPC will end at the end of

## Columbia River Economics

With Judge James Redden’s decisions to require increased summer spill in the Columbia River system to assist downstream migrating salmon and steelhead in 2005, and more recently in 2006, the Bonneville Power Administration’s frantic complaints about “foregone power revenues” have reached new levels of frequency and hysteria.

In this setting, we think it is useful to remind readers and the public of a sidebar (pp 208 and 209 in my pre-publication copy) contained in the landmark National Academy of Sciences/National Research Council report, “Upstream: Salmon and Society in the Pacific Northwest.” Published in 1996 as the culmination of three years of study by 15 senior scientists with deep and widely varied credentials in salmon related disciplines, the conclusions of this report have been confirmed by the intervening years of scientific study.

The report is largely devoted to the science of salmon, but it makes occasional comments on values. This sidebar (Box 9-1 Annual Costs of Fish and Wildlife Investment) is clearly a discussion of values, and we think it still asks the right questions about values in the Columbia River system. Following are quotations from it.

“The largest annual cost for salmon restoration in the Columbia River is in water. An implicit assumption in design of the system of dams was that there would always be water for fish. Water, however, is not available in the right places, in adequate quantities, or at the right times to meet the requirements of migrating salmon. Fish have no rights to

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*Senator Craig is among the group that writer Thomas McGuane has described as “Idaho’s nature hating politicians.”*

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## Wild Salmon Harvest, Continued from page 1

any guide, little progress will be made until we change the thinking that allowed the native fish to reach their current sorry state. A population that has become so depleted as to be declared at risk of extinction is no longer a resource to be allocated and exploited. Instead, it must be treated as a wild animal threatened with extinction, entitled like all other similarly situated animals to all the protections of the ESA. It should no longer be killed for sport or for food – at least until the populations recover enough to be delisted (or even better, until they can support a sustainable harvest).

Under the ESA, threatened and endangered animals cannot be hunted on purpose. We do not sell licenses to shoot spotted owls, or wolves, or murrelets, and we should not authorize intentionally fishing for listed salmon. Defenders of current harvest practices would be quick to argue that fisheries do not target ESA-listed runs. Instead, they claim that listed fish are only caught "incidentally" in fisheries aimed at hatchery fish and other, abundant native stocks of the same or other species.

In reality, the fisheries that "incidentally" catch significant numbers of listed fish predominantly are nonselective, mixed stock fisheries. A nonselective harvest does not take any part of a mixed stock "incidentally." All of the fish are taken on purpose, as a result of a conscious decision to fish on a mixed stock using nonselective methods. Nor are the offenders limited to commercial net fisheries. Any sport fishery like that off the west coast of Canada's Vancouver Island that targets a mixed stock of hatchery and ESA-listed Chinook and is not catch-and-release for unmarked fish is intentionally and unnecessarily

catching listed salmon.

There are both practical and legal reasons for ending the nonselective mixed stock fisheries that continue to catch significant numbers of ESA-listed salmon and steelhead. For starters, it will be difficult, if not impossible, to ever recover depressed salmon and steelhead populations if we do not reform harvest practices.

Some believe that recovery will be achieved by improving habitat, thereby producing more juveniles and

part, this is due to biology: salmon reproduce only once, and then they die. As a result, the size of a salmon population, and its progress toward recovery, are judged by the number of adult native salmon that return to the rivers to spawn. In our efforts (and spending) to get juveniles to sea, we sometimes overlook this. More juveniles to sea without more adults returning to spawn produces no recovery benefit.

Viewing recovery efforts through



Ocean and bay fisheries often include harvest of wild salmon and steelhead that are listed under the Endangered Species Act. Photograph by Jim Yuskavitch

improving their survival in their migration to the ocean. The argument for removing Snake River dams is a variation on this theme, as is the current debate over spill versus trans-pore to move juvenile Chinook down the Snake and Columbia.

Habitat improvement is an important part of this puzzle. But salmon recovery will not be measured by the number of juveniles produced in the rivers, nor by the number that complete their migration to the ocean. In

this lens, focusing on the end of the salmon's life cycle, it is easier to see where the greatest opportunities for further improvement may be found. From this perspective, the importance of harvest reform becomes obvious.

The life history of the salmon drives the major conflict between salmon harvest and salmon recovery. Once the salmon spawns, it dies and decays. Even before it reproduces, it under-

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goes changes that make it unappetizing, if not unfit, for human consumption. As a result, we strive to catch the salmon well before it spawns, and it dies a virgin, making no contribution to recovery.

The harvest numbers tell the story. Certainly fisheries have suffered since the listings, but the same is true throughout the world when there has been overfishing and depleted runs. Today, even though the total salmon catch has been reduced in many fisheries, ocean and in-river fisheries combine to catch almost 50 percent of Snake River Fall Chinook during their homeward journey. The same is true for Lower Columbia Chinook. The catch of Puget Sound Chinook varies by river from 22 to 76 percent. Reducing the catch of these ESA-listed salmon even by half would significantly increase the number of returning adults, and so would speed their recovery.

We have the ability to make these harvests more selective and ESA-friendly. With fin-clipping or other marking techniques, abundant hatchery fish can be targeted for harvest while ESA-listed, unmarked fish are released. The fish produced for harvest by federally funded hatcheries already are fin clipped, and National Marine Fishery Service recently amended its rules protecting "threatened" salmon to differentiate between marked and unmarked fish. Moreover, the abundance of hatchery fish and the inefficiency of methods currently used to reduce the harvest of listed fish mean that a move to mark-selective fisheries could actually increase the harvest and still return more native adults to the rivers to spawn.

Implementing mark-selective fisheries certainly is feasible. Many sport fishers already have "catch and release" experience. Commercial fishing techniques can be adapted to catch-and-release, too. Terminal fisheries also can be highly selective, as some tribal fisheries have shown. Of course, changing commercial fishing gear and other reforms will have a price. But we should be able to pay that price, including compensation for the fishermen where warranted. We already pay far more for less

direct recovery measures.

In addition to the direct gains possible from harvest reform, current harvest management is a drag on all other recovery measures. When salmon runs improved in recent years, fishery managers responded by increasing the harvest. They extended seasons, even opened seasons on

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*Today, it seems that  
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speed recovery.*

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runs that had not been fished in more than a decade.

The same sort of thinking inspired fishery managers to propose a tripling of the catch of listed winter steelhead on the Lower Columbia, just so more hatchery salmon could be caught in nets. Instead of managing fisheries to speed recovery of the weak stocks, fishery managers are still treating ESA-listed populations as an economic resource. It seems that today, salmon recovery contributes to harvest, rather than harvest being managed to speed recovery.

Current harvest management philosophy and practices are not only bad for salmon recovery, they cannot meet the legal requirements of the ESA. Harvest plans for the Columbia in-river and Puget Sound fisheries, and for Canada's fisheries under the Pacific Salmon Treaty, all have been evaluated under the ESA by the National Marine Fisheries Service (NMFS), the agency charged with protecting ESA-listed salmon.

Each of the harvest plans is flawed, and should not have been approved by NMFS. For example, in Puget Sound, NMFS found that proposed harvest rates would thwart the recovery of salmon from nine rivers. The harvest impacts would have been worse, but the agency's analysis used deflated target "recovered" population levels,

an order of magnitude or more smaller than the targets used in planning habitat restoration. Still, NMFS somehow found the plan met ESA standards. Similar problems exist with the agency's evaluation of the impact of Canadian fisheries, and those conducted in the Columbia.

The Salmon Spawning & Recovery Alliance, the Native Fish Society and the Clark-Skamania Flyfishers, have filed suits based on the impact of Canada's fisheries on ESA-listed salmon, and are preparing actions on Puget Sound and in-river Columbia fisheries. The objective of these actions is to encourage reform of harvest practices and reduce impacts on listed populations.

Why hasn't more been done to curtail the impact of harvest on ESA-listed fish? Harvest methods persist relatively unchanged in large part due to a belief among harvest managers that habitat is the only problem. They are convinced that current habitat conditions limit the number of salmon and steelhead that can spawn productively, and that even at currently depressed population levels, harvest only takes the "excess" fish that would not be able to make productive use of the available spawning habitat.

This is traditional fishery management dogma, but it is wrong when applied to ESA-listed stocks. The errors begin with the starting premise, that allowing the return of spawners beyond the level where productivity begins to decline is a waste

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**Commercial fishers, along with sport anglers, take their toll on ESA-listed fish. Photograph by Jim Yuskavitch**

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of harvestable fish. That may (or may not) be true for a healthy population. But for an ESA-listed population, there is no such thing as an "excess" fish.

First, this is not a distinction recognized by the law. The ESA does not let us divide a listed population into two parts, one "protected" and one "excess." ESA-listed populations are either protected or they are not. If any salmon population is healthy enough to produce an "excess," then some would question why it is listed at all.

Second, it is hubris, at best, to claim



**A coho and Chinook salmon harvested off the west coast of Vancouver Island, British Columbia, where ocean-caught wild coho must be released, while those hooked in the bays and sound may be killed. Photograph by Jim Yuskavitch**

the ability to draw the line between "enough" and "excess" spawners in a depressed population. No one has suggested that allowing more spawners to return to the rivers would reduce the size of the next generation. Rather, some claim it would not produce an increase, or would do so only marginally. This amounts to a claim that salmon populations are not just

habitat limited, but so severely limited by their habitat conditions that increasing the number of spawners would have no beneficial effect on reproduction.

To suggest that the available spawning habitat is fully utilized at current population levels – that the "hotels are full" as one manager has put it – pretends to a level of knowledge far beyond what can be supported by current science. The life cycle of the salmon plays out against a very dynamic backdrop, far too dynamic to allow claims of such precision in managing populations. There is uncertainty in fishery management, as routinely demonstrated

by the often significant gaps between the projected and actual size of runs. The ESA requires that in the face of uncertainty, the benefit of the doubt goes to the listed animal. The Act protects the fish, not the fishery.

Third, the so-called "excess" fish produce many benefits, whether or not they directly increase the number of recruits to the next generation. The eggs that additional spawners bring to the rivers and the bodies of the spawned out fish are important sources of nutrients in the freshwater ecosystem, directly and indirectly benefiting the next generation, and those that follow. Reproductive competition increases with higher numbers

of spawners, and that is good for the gene pool. Finally, more fish means more physical disturbance of the gravel, which improves the quality of the spawning habitat, loosening the gravel and helping to wash away fine sediments.

Here, then, is how harvest reform could fit into plans for recovery of the

region's ESA-listed salmon and steelhead, along with (and not in place of) habitat and hydropower measures, and reform of hatchery operations. "Re-invent" ocean intercept fishing as selective harvest, based on fin-clipping or other mass marking, as well as gear changes. Emphasize terminal fishing.

More selective targeting of hatchery fish by itself will not get more adult salmon and steelhead back to their natal streams. The agencies must also reduce their targets for the incidental catch of listed fish. But with more selective fishing methods, it should be possible to reduce the catch of ESA-listed fish while still maintaining, or even increasing, existing harvest rates.

Efforts should not stop with regulating fishing methods and harvest rates. Market forces should be applied to encourage practices that are sustainable. A certification program for marketing fish caught using ESA-friendly means would assure consumers that the wild salmon they eat are not threatened or endangered. It also would assure stores and restaurants that the same is true for wild salmon that they sell. Consumers of salmon should demand harvest reform, both to assure that they are not eating listed fish, and to assure that the money and effort put into other salmon recovery measures pays off.

We need to implement harvest reform if we are to complete the mental transition from viewing salmon as a resource to recognizing them as a wild animal threatened with extinction, and in need of our help to recover. Of course, almost no one advocates preserving wild salmon as mere "museum pieces," and so removal from the ESA's list is not our ultimate objective.

Recovering salmon to harvestable levels is a shared regional goal. But we may never get there if we do not change the way we go about fishing for salmon today.



## Native Broodstock, Continued from page 1

ing of salmonids, conservation of wild fish populations was not a major concern among the fish agencies and tribes. Now that wild fish are a factor, saving the hatchery programs and creating a framework that justifies their continued operation has become a necessity for fish management agencies.

It is no longer acceptable to limit hatchery evaluation to the number of juveniles released; it must include their survival, contribution to fisheries and their impact on natural populations. The ESA requires evaluation on the effect of hatchery fish on wild fish and the ecosystems that support them. This has led to looking “beyond the hatchery fence” and has created the idea that hatcheries can be used to recover wild salmon and steelhead populations. Native broodstock hatcheries have become the new fad in the Northwest, along with claims that the best way to operate a hatchery program is to integrate wild and hatchery fish populations using native, wild fish as the source for artificial propagation. But the fad is overreaching the science. These native broodstock hatcheries have not been tested to see if they can actually be used to rebuild wild salmonid populations and protect their biological integrity. In fact, the most recent scientific assessments indicate that these so-called conservation hatcheries create problems. However, that has not deterred the political enthusiasm for using hatcheries to rebuild wild salmonid populations.

Agencies such as the Oregon and Washington departments of fish and wildlife are converting their hatcheries to serve, in part, a conservation function, along with production of fish to serve harvesters. The Northwest Power Planning and Conservation Council is presently advocating the integration of wild and hatchery fish in the region’s hatcheries. Washington’s Hatchery Scientific Review Group has developed a plan for hatchery integration, and NOAA Fisheries has drafted a new hatchery policy that promotes hatchery and wild fish integration. This is all being done in the name of conservation, but



Using wild broodstock as a tool to restore wild salmon and steelhead runs is gaining momentum in the Pacific Northwest. Some remain skeptical that it will work over the long-term. Photograph by Jim Yuskavitch

so far the technology is experimental and there is no scientific verification that it works as it is being sold.

The purpose of this type of hatchery is to reduce the risk to native, wild salmonids from genetic and ecological changes that reduce reproductive success. But does it?

### Contribution of Hatchery Fish to the Natural Productivity of Wild Fish

In a 2001 study, researchers Ian Fleming and Erik Peterson evaluated the reproductive success of hatchery and wild salmon in nature and found that the hatchery fish productivity was less than that for wild salmon. The reasons for this reduced productivity were stated as: “Ultimately, the breeding success of [female] hatchery fish is frequently inferior to that of wild females” and “Hatchery males tend to be less aggressive and less active courting females and ultimately achieve fewer spawnings than wild males.”

### Mixed Spawners Means Lower Natural Productivity

In 2003, Mark Chilcote, of the Oregon Department of Fish and Wildlife, published a paper that evaluated the effect on reproductive success by mixing wild and hatchery steelhead on the spawning grounds. He concluded the following: “...a spawning population comprised of equal numbers of hatchery and wild fish would produce 63% fewer recruits per spawner than one comprised entirely of wild fish. For natural populations, removal rather than addition of hatchery fish may be the most effective strategy to improve productivity and resilience.”

### Conservation and Evolution in Salmonids, Perspectives Over Six Decades

In 2004, Fred Utter published a paper tracking his thoughts about fish culture over six decades. He studied under Dr. Lauren Donaldson at the University of Washington where he

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learned that salmonids were interchangeable and could be translocated to serve supply and demand for fish. However, other faculty held that each local population was genetically adapted to its own environment, but this insight did not become apparent to him until later. He makes a distinction between fish culture and conservation, concluding that: "Where the goal is interbreeding between cultured and wild fish (to reduce domestication), breeding and rearing goals include minimizing the phenotypic and genetic divergence of cultured and natural fish. An alternative strategy is to rear and release hatchery fish in a manner intended to minimize their interbreeding with natural fish and to permit separate harvests of the two groups. The comparison of these two strategies indicates that the separate approach favors a goal for conservation of wild populations."

### Hatchery Fish Impede Protection and Recovery of Wild Salmonids

Independent scientific review of initiatives by fish managers is critical for evaluating the course of action in salmon and steelhead management and recovery. The National Marine Fisheries Service (NMFS) appointed an independent science panel to review its salmonid recovery policy. The Salmon Recovery Science Review Panel (RSRP) published a paper addressing the NMFS draft hatchery policy that calls for including hatchery fish to be counted in listing and delisting decisions. The RSRP (2004) disagreed and NMFS management tried to suppress the message, forcing the RSRP to publish their findings in *Science*. That paper is now available on the Internet at: <http://www.nwfsc.noaa.gov/trt/rsrp.htm>. Go to the September 2004 report.

The NMFS has included hatchery fish along with wild salmonids when listing wild salmonids under the ESA. The NMFS hatchery policy would perpetuate the claim that hatchery and wild fish are similar in their reproductive success in the natural environment. This claim paves the way for the development of native brood-

stock hatcheries as the tool to recover wild salmon and steelhead, even though the weight of scientific research does not support this claim.

### Same Shed, Different Tool

The integration of hatchery and wild salmonid populations has been going on for 150 years, and the Northwest salmon and steelhead runs have continued to decline and go extinct. In order to preserve hatcheries and the millions of public dollars that flow to the agencies and tribes to operate them, a new tool had to be found in the same old shed. It is called, surprisingly, hatchery integration. This is a

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*The unstated purpose  
behind native  
broodstock hatcheries  
is to improve the  
survival of hatchery  
fish for harvest.*

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re-tooling of the term supplementation that withered under scientific review. The stated purpose of both concepts is to save wild fish, but the unstated reason behind hatchery integration is to improve the survival of hatchery fish. And it does.

The results of an experimental wild steelhead broodstock program on Oregon's Hood River point out that the "new hatchery fish" derived from wild parents do survive better than the "old hatchery fish" using fish cultivated for 48 years, but their survival and reproductive success are still not equal to wild fish.

### Integration of Hatchery and Wild Fish Will not Increase the Wild Population

Using hatcheries to rebuild wild salmon and steelhead populations is on many managing agencies' priority list. The Independent Scientific Advisory Board (ISAB) was asked by NOAA Fisheries, the federal agency

with the authority to recover ESA-listed salmon and steelhead, to provide a scientific assessment of using hatchery fish to rebuild wild populations. An important question is whether the wild population is sustainable once the hatchery boost is removed.

The ISAB evaluated 97 integrated hatchery programs in the Columbia River Basin and in Puget Sound. They found that "Only 2 of 97 natural populations appear to be self-sustaining at this time," and "...there is little evidence of self-sustaining natural populations in integrated hatchery/natural systems." The ISAB said, "The first step toward improving these programs is to improve the carrying capacity of the environment and the productivity of the natural-origin salmon and steelhead." They also note that these programs fell short on maintaining criteria to help maintain the reproductive success of the natural populations: having 10 percent or more of the broodstock be of natural-origin and having less than five percent of the natural spawning adults of hatchery origin. These criteria were recommended by a science review panel for Washington hatcheries, but state compliance with those recommendations remains a problem.

Another concern that has been elevated by scientific evaluation is the loss of fitness or reproductive success of hatchery fish. There is evidence that hatchery fish fitness declines regularly with the number of generations in the hatchery and data indicates fitness is lost in excess of 20 percent per generation.

The ISAB concludes by saying, "...reestablishing self-sustaining populations is likely to be the exception, rather than the rule unless ecological/habitat/overharvest/ problems are solved and augmentation (hatchery) programs have been implemented in a manner that minimizes genetic/adaptive impacts on natural populations."

The ISAB response is available at: <http://www.nwppc.org/fw/isab/Default.htm>. Go to the study 2005-2.

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## Reconstructing Salmon to Fit Social and Political Trends

Our view of salmon is shaped by experience, observation, society's values and political initiatives. This social construction of salmon has little to do with the salmon itself, its behavior, natural history or adaptive evolution. We act on the salmon's behalf through our own social viewpoints, and those viewpoints constantly change.

Prior to the listing of wild, native salmon populations under the ESA, there was little regard given to wild salmon, but once they were listed, wild salmon recovery became an industry. Our approach to pre-ESA salmon was to construct hatcheries to "mitigate" the loss of salmon habitat as the dams were built, but little evaluation was done to determine whether mitigation was successful in replacing what was lost. Mitigation with hatcheries for lost and degraded salmonid habitat with hatcheries has been a major failure given the fact that hatchery and wild salmon and steelhead abundance is now two percent to five percent of historical levels.

In his book "Fishy Business, Salmon, Biology, and the Social Construction of Nature," Rik Scarce interviewed Pacific salmon biologists and protected them with pseudonyms. The book is based on those interviews, and it provides an insight into how we socially construct salmon.

Scarce says that, historically, biologists constructed salmon to be seen as "interchangeable with one another.... Salmon become part of an undifferentiated, homogenized Nature.... The result is an oddly commonplace salmon – a mechanical, schematic, engineered fish – to many of those who know the most about them. The outcome is a highly engineered fish.

The historical goal of hatcheries has been to create a homogenized salmon. Such fish are supreme examples of rationalization. They are the products of a predictable, calculable, efficient, productive process – fast food with fins."

Today, some biologists see themselves differently, and their research has led to viewing salmon in the context of their variable habitats and evolutionary history. Yet they argue that their research is not being included in management decisions.



Agencies do make an effort to separate hatchery and wild fish. This wild male coho was released above a stream barrier allowing it to spawn away from hatchery-reared fish. Photograph by Jim Yuskavitch.

## The True Value Of Native Broodstock Hatcheries

A shift is taking place in our view of salmon. The view that salmon are interchangeable is being replaced with a view that salmon are locally adapted, a long standing debate in the Northwest, going back to the research of Willis Rich in 1939.

David Montgomery in his book "King of Fish," said, "Rich noted the need to base hatchery programs on local stocks. He also said that state fisheries managers did little to protect wild runs that provided the genetic bank from which to draw robust local broodstock."

The management of hatcheries and harvest is beginning to adjust to this change, but has not been fully converted. The native broodstock hatchery recognizes that local wild stocks can improve the performance of the hatchery fish; their survival and therefore their contribution to fisheries are enhanced. Claiming that native broodstock hatcheries are good for wild salmon recovery, and even essential, is another story that is not supported by the science.

The fish management agencies and the NMFS have sold the native broodstock hatcheries as a recovery tool for wild salmon and steelhead before they have been fully tested to determine whether they work. The few on-going research projects are not promising, showing that the native broodstock hatchery fish are not equal to wild fish in survival and reproductive success. These hatchery fish diverge from the wild fish gene pool they were derived from in phenotypic traits in the first generation. The native broodstock hatchery changes the fish so that they have greater survival fitness in the hatchery than in streams. This change is due to both selective pressures in the hatchery and to relaxing selective pressures the fish would encounter in streams. This domestication selection in the hatchery can be reduced but it

cannot be eliminated, so the hatchery fish will always be different from wild fish in traits important for survival. The only result that can come from integrating wild and hatchery fish in hatchery programs is a homogenized population that does not do well in the hatchery or in streams. The fish managers have coined a term for these homogenized creatures; they call them "natural" salmon and steelhead, and they have the institutional commitment to transform the region's wild salmonids into mongrels.

The unstated purpose behind the native broodstock hatcheries is to improve the survival of hatchery fish

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for harvest, but the stated purpose is to save wild salmon and steelhead. As long as the native broodstock hatcheries are not scientifically evaluated, the fish management agencies can escape accountability and perpetuate their deception.

For the last 150 years the fish management agencies have integrated hatchery and wild salmonid populations in the Northwest; fortunately the wild populations were largely resistant to this assault, but the result has been a loss of biological diversity, declining abundance, extinctions and reduced fisheries. They now claim that the best way to save wild salmon is to integrate hatchery and wild fish. The only change has been the sales pitch.

The only way to protect and recover wild salmon is to manage hatcheries as separate from wild populations. This means hatchery fish would not interbreed with wild fish and they would not compete for food and rearing space in the rivers. It also means the fisheries would be segregated and focused on hatchery fish. One objective of harvest management should be to increase the abundance of wild fish returning to their home streams. In this way their integrity and the productive capacity of both wild and hatchery fish are maintained by segregated harvest and hatchery management. Wild salmonids will always be needed to refresh hatchery fish to improve their survival, and without them, the hatchery programs cannot be sustained. This is a different proposition than merging wild and hatchery fish into a single homogeneous population. The future productivity of the hatchery program and the benefits it provides society depend upon having abundant, healthy wild populations throughout the landscape.

In order to protect and restore wild salmonids, their habitat quality and quantity have to be restored. This is a more difficult task than stocking hatchery fish in the attempt to replace damaged or lost habitat. Wild salmonid recovery depends upon having the habitat capacity each population requires to successfully complete its life cycle and maintain its reproductive success. It also means having

the abundant wild populations to fully occupy the habitat and provide nutrients for stream productivity. Therefore, restoration must effectively address the habitat requirements of a wild population and make sure that the fish are healthy enough to use it fully and effectively.

Wild salmonid recovery would be on a sound scientific footing if all wild populations were identified. There is presently no complete inventory of the region's wild salmonid populations. This inventory would not only identify the location of each wild population, it would describe its genetic and life history characteristics. With

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this baseline data, it would be possible to evaluate the various harvest, hatchery, and habitat experiments that flourish across the landscape. Until this is done, there can be no "adaptive management" and accountability, nor will we be able to describe successful management. Knowing the location and condition of the remaining natural biological diversity of native wild salmonid populations is a fundamental requirement of conservation management. Delaying this inventory is a testimony to fish management agencies that are not actually interested in serving their conservation mandate.

The native broodstock hatchery does not promote conservation and recovery of wild salmon and steelhead populations; it blends them into an ambiguous vegetable soup. The actual purpose of native broodstock hatcheries is to improve the survival of hatchery fish and their contribution to fisheries. While this goal is important, it should not be done at the risk of the remaining wild populations. A

more comprehensive conservation program for wild salmon and steelhead is called for, recognizing that healthy and abundant wild salmonids are not only socially and biologically important; the hatchery programs will need them to remain productive.

This is brought into sharp focus by Kostow in her review of the Hood River steelhead native broodstock program. The "old hatchery stock" has a smolt to adult survival rate that is 17% compared to the wild steelhead while the "new hatchery stock," derived from the wild steelhead gene pool, has a survival rate of 80 percent to 85 percent of wild steelhead. It is obvious that the wild steelhead population is needed to maintain the productivity and cost effectiveness of the hatchery program.

What remains out of focus is the impact from integrated hatchery programs used to "supplement" wild salmonid populations.

Integrated hatcheries will not rebuild wild populations. They will increase the number of fish available for harvest, which is their actual purpose, even though much is said about their conservation value. The hatchery environment changes the fish so that they do not have the same reproductive success as wild salmonids and this domestication selection cannot be eliminated. Consequently, integrated hatcheries will continue to mine wild stocks for an egg supply, the hatchery fish will continue to have an ecological impact on wild fish, the hatchery adults will interbreed with wild salmonids and reduce their reproductive success, and funding will continue to be diverted away from habitat protection, restoration and evaluation. All these factors can lead to only one conclusion: The integrated hatchery is detrimental to wild salmonids and should not be used in ESA listing decisions or to rebuild wild populations. The funding for integrated hatcheries should be used to protect and monitor the health of wild salmonid populations and for habitat protection and restoration so that the productive capacity of our native wild salmonids is improved.





## Oregon and Washington Hatchery Steelhead Integration Programs Whose Viability is Rated as At-Risk by the Independent Scientific Advisory Board

Species/ESU/Basin	Sub-Basin	Program/Stock
<b>Lower Columbia Steelhead ESU</b>		
Cowlitz	Cispus River	Cowlitz Winter Run
Cowlitz	Tilton River	Cowlitz Winter Run
Cowlitz	Upper Cowlitz	Cowlitz Winter Run
Cowlitz	Lower Cowlitz	Cowlitz Winter Run
Kalama	Kalama	Kalama Winter Run
Kalama	Kalama	Kalama Summer Run
Clackamas	Clackamas	Clackamas Winter Run
Sandy	Sandy River	Sandy River Late Winter Run
Hood River	Hood River	Hood River Winter Run
Hood River	Hood River	Hood River Summer Run
<b>Middle Columbia Steelhead ESU</b>		
Umatilla	Umatilla	Umatilla Summer Steelhead
Walla Walla	Touchet River	Touchet Summer Steelhead
Deschutes	Deschutes	Deschutes Summer Steelhead
Yakima	Yakima	Yakima Summer Steelhead
<b>Upper Columbia Steelhead ESU</b>		
Wenatchee	Wenatchee	WDF Wenatchee Program
Methow	Methow	Wells Hatchery
Methow	Methow	Winthrop Hatchery
Okanogan	Omak Creek	Methow/Sp-Methow
<b>Snake River Steelhead ESU</b>		
Clearwater	Clearwater	Dworshak B-Run Steelhead
Imnaha	Imnaha	Summer Steelhead
Tucannon	Tucannon	Summer Steelhead
		Source: "Viability of ESUs Containing Multiple Types of Populations," ISAB, April 8, 2005

# Critical Salmon and Steelhead Habitat

## Administration Rolls Back Safeguards for Imperiled Species

By Jan Hassleman

— *Earthjustice* —

*Author Jan Hassleman is a staff attorney with the Seattle office of Earthjustice, the foremost non-profit public interest environmental law firm in the U.S.*

**B**ecause salmon and steelhead range from stream to ocean and from mountains to coast, the health of these anadromous fish in their varied habitats is a bellwether of our region's environmental health. Salmon and steelhead are impacted by the loss and degradation of these habitats — by urbanization, logging, grazing and dams — more than any other factor. That's why a recent action by the Bush administration sharply curtailing protection for these habitats triggered howls of protest from fishermen, conservation groups, and small communities throughout the region.

### What is Critical Habitat?

When it passed the Endangered Species Act in 1973, Congress understood that protecting habitat would be the key to protecting imperiled plants, fish and wildlife. Congress also wanted to do more than just keep these species on "life support"—instead, it wanted to implement measures that would lead to the recovery of these species. Both concepts are embraced by the Act's "critical habitat" provisions.

Under the ESA, at the time a species is designated as endangered or threatened, the National Marine Fisheries Service (or "NMFS", which has jurisdiction over anadromous species) is required to designate its critical habitat, defined as the specific areas on the map that the species will need to survive and recover. Once designated, federal agencies have to take steps to make sure they are not harming that habitat when they take actions like

authorizing pesticides, planning timber sales, or filling wetlands. Not surprisingly, the Act's critical habitat provisions have become controversial, and the agencies' failure to properly protect and designate critical habitat has been a flashpoint in countless environmental battles and lawsuits over the years. In fact, the majority of species listed under the Act still don't have any critical habitat designated at all.

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### History of the Critical Habitat Rules and its Impacts on Salmon and Steelhead

Although the listings of salmon and steelhead began as early as 1991, NMFS didn't get around to finalizing its critical habitat designations for most runs until 2000. The rule, issued after extensive comment from scientists and the public, was appropriately sweeping, acknowledging that virtually all accessible and potentially accessible stream reaches currently and historically occupied by anadromous fish were important for recovery, and needed to be protected. The rule also acknowledged that riparian areas were very important to the health of rivers that these fish call home, and so these areas were included as well.

The National Association of Homebuilders brought a lawsuit in 2002 challenging these protections, claiming that the agencies had not conducted an economic analysis of the rule's impacts. With a new, friendlier administration in place, the Homebuilders didn't have to work very hard. The administration quickly agreed with them that the rules needed revision, and reached a friendly settlement of the lawsuit. The rules themselves were withdrawn, and work started on a new rule-making process.

Political operatives began promoting options that would radically reduce the amount of critical habitat protected in the new rules. In charge of the process was Mark Rutzick, a former timber industry lawyer who had made his career fighting fishing and conservation advocates in court over timber sales and other destructive activities. Some of the concepts floated would have functionally gutted salmon and steelhead critical habitat protections. For example, the agency proposed eliminating from critical habitat any areas covered by some other kind of conservation plan — such as the Northwest Forest Plan, forestry habitat conservation plans, and state timber harvest rules. Perhaps the most absurd idea of them all was to exempt the entire mainstem of the Columbia and Snake rivers on the theory that federal agencies are already working hard to protect salmon and steelhead there. The fact that federal judges have declared these efforts unlawful on three separate occasions was, not surprisingly, ignored.

The proposal generated tens of thousands of comments from fishing and conservation advocates. Earthjustice and its allies released a "white paper" for distribution to key Congressional leaders about the flaws in the proposal. The strong majority

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of the comments urged NMFS to maintain vigorous critical habitat protections for anadromous fish.

## The 2005 Rules

In September of 2005, the new final rules were unveiled. In it, the agency designated a little less than 30,000 miles of stream, river and estuary habitat in Washington, Oregon, Idaho and California as critical habitat, as well as some marine nearshore habitat in Puget Sound and San Francisco Bay area. While this sounds like a lot, it was a dramatic reduction from the old rule. NMFS' own leaders told the press that the new rule represented an 80-90 percent reduction from the old designation, although they later retreated from that estimate.

Thanks to the hard work of habitat advocates and scientists, some of the worst ideas were not implemented. The proposed exclusions for land management plans and the Columbia-Snake mainstem did not make it into the final rule, for example. However, the agency noted that it was still considering these ideas and may decide to amend the rule in the future. Regrettably, some of these abysmal concepts were adopted in a similar critical habitat rule for bull trout, which is being challenged by conservation organizations in Montana.

While salmon and steelhead dodged a lethal blow, they did not emerge unscathed. The final rule has some significant flaws that undercut its effectiveness and raise questions about the agency's use of science. The rule also backs away from a firm commitment to the ESA's recovery mandate.

The first concern is about "unoccupied" habitat. In lieu of looking at what the fish really need to survive and recover, NMFS limited itself to considering the importance of areas that are already occupied by salmon and steelhead. This approach wasn't grounded in the science. There are abundant stream and river reaches that used to be habitat for anadromous fish but are currently unoccupied. That shouldn't be a surprise — these are endangered species and there's plenty of former habitat from which they've been extirpated. Just

because an area is no longer occupied does not mean that it's not necessary for recovery.

A good example is the Skagit River estuary in Washington State. Juvenile salmon and steelhead are absent from most of the tidal reaches of the Skagit River, as much of the area has been diked and drained for farming. The science shows very clearly that restoring anadromous fish to some of this former habitat is going to be necessary if Skagit river Chinook—currently listed as threatened—have any hope of getting off of the endangered species list. But the new rule doesn't



Some of the best critical habitat for salmon is located on private lands. Photograph by Jim Yuskavitch

extend protection to that area, violating the law's letter as well as its spirit of doing what it takes to recover species.

Another key problem is riparian areas. Rather than acknowledging the importance of streamside habitat for water quality and salmon and steelhead habitat needs, the new critical habitat designation stops at the water's edge.

Finally, the rule uses a grossly distorted economic analysis to unfairly inflate the costs of the rule and discount its economic benefits, eliminating whole watersheds like Washington's Sammamish River from critical habitat protections on the basis of this flawed cost-benefit balancing. Earthjustice hired an economic consulting firm to critique this analysis. That report uncovered "overlapping, fundamental flaws" that rendered it "unsuitable" for its intended purpose. These extensive

and well-supported comments were largely ignored by the agency.

## Where do we go from here?

Protection of habitat is the key to ensuring that endangered species like salmon and steelhead have a fighting chance to survive and recover. Earthjustice and its allies in fishing and conservation groups will continue to push hard for revisions to the final critical habitat rule, and for its proper implementation and enforcement. Meanwhile, the greatest threat of all lies in the U.S. Congress. With virtually no debate, the U.S. House of Representatives passed a measure this fall —sponsored by anti-ESA advocate Rep. Richard Pombo—that eliminates the critical habitat provisions of the ESA altogether, in addition to gutting the Act in several other ways. Those of us that work on the ESA understand that there has never been a time in the law's 30-plus year history when it has been under greater threat. It is imperative that the Senate take a much more measured approach to hearing from the public and the experts before taking up any ESA legislation.

While conservation and fishing advocates are open to discussing ways to improve and update the act, for example by providing greater incentives to conserve habitat on private lands, efforts to gut the act or reduce its fundamental habitat protections could result in extinction for salmon and steelhead. Protecting ESA-listed salmon and steelhead species is an important aspect of our way of life and our economic health. Call your senators to make sure that they know as well.

*Editor's Note: The white paper mentioned in this article can be found at [http://www.earthjustice.org/policy/pdf/salmon\\_habitat\\_report\\_small2.pdf](http://www.earthjustice.org/policy/pdf/salmon_habitat_report_small2.pdf).*



# Hatcheries as a Consideration for Thompson River Steelhead Restoration

By Bill McMillan

— *Washington Trout* —

Last December, a fish advocacy group in Spences Bridge, British Columbia held a forum to discuss ways that hatcheries might stem declining steelhead runs on the Thompson River. Bill McMillan was asked to provide a response to that meeting, which was published in the winter 2005 issue of *Fly Lines*, the publication of the British Columbia Federation of Fly Fishers. This article is reprinted with their permission.

Bill McMillan is board president and part-time field biologist with *Washington Trout*. He may be reached at [monksend@fidalgo.net](mailto:monksend@fidalgo.net).

**W**hy would Canadians look to the U.S. for an example of how to restore a threatened or endangered wild fish resource, given the American record: an ever growing list of salmon and steelhead listed under the Endangered Species Act with no examples of recoveries to emulate?

## A Look at the Evidence

The U.S. Endangered Species Act does have some successes: Peregrine falcons, brown pelicans, gray whales, and American alligators among the better known species now considered recovered. But no ESA listed population of fish species, as an entire unit called an Evolutionarily Significant Unit (ESU), has yet recovered.

Regarding threatened or endangered stocks of anadromous fish in U.S. rivers, there is a good understanding of what has created salmon and steelhead depletions through what is commonly known as the “Four H’s” – *habitat loss, hydro development, overharvest, and proliferation of hatcheries.*

Of the Four “H’s”, no one advocates that continued habitat loss, continued

hydro development, and continued over-harvest will ever be useful tools for wild fish restoration. Proliferation of hatcheries is the lone exception. Hatchery advocates persist in the 130-year claim that all we need to do is fine tune them a little, operate them more scientifically, and they will provide the basic building block for salmon and steelhead restoration. It could similarly be said that a gas guzzling SUV can be a useful tool for conservation of oil resources and to lower fuel costs if they can be altered to get

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*The Thompson has only two of the four “H”s working against its wild steelhead. Why add a third?*

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60 mpg. Someday, maybe. Then again, before that someday comes around, we will likely have come up with a better solution once we abandon an outdated technology built on a faulty concept.

Is there any evidence that we have more wild salmon and steelhead now than we had 130 years ago, or 90 years ago, or 50 years ago? Not that I know of in the Lower 48.

For but one example, as late as the 1950s, Washington’s Skagit River sports harvest was commonly 15,000-20,000 wild steelhead with total returns likely 30,000-45,000. But after initiation of the modern hatchery program in 1960, the steelhead numbers went into a long gradual decline after an initial period of seeming hatchery success in the 1960s. The total Skagit steelhead return the past five years,

both hatchery and wild (with only a catch and release sport fishery of wild fish and harvest of hatchery fish and virtually no tribal harvest) has averaged only about 6,000 steelhead (range 3,000-7,000) with no up-trend in sight.

Only one in-depth assessment of Washington’s hatchery steelhead program was ever made. Interestingly enough, it was by Canadian Loyd Royal in 1972. He forewarned that on the Skagit River and several other streams in Washington, hatchery smolt releases had created a “density barrier” adversely affecting steelhead survival. He indicated wild runs were dropping as a result and hatchery returns suffered increasingly poor survival as the hatchery releases increased.

Yet, hatcheries have operated throughout the past 130 years with the same promise: they will eventually provide more than nature ever could *when* operated correctly. At some point that *when* has to be made accountable, and 130 years is probably well past the point of useful accountability.

Thompson River steelhead are an inland race similar to the “B” run steelhead historic to portions of the Snake River system – large steelhead averaging 14 pounds. In the case of the Snake River, there are two theoretical justifications for hatcheries:

1) Fiftyfive percent of former habitat in the Columbia/Snake is blocked by dams without ladders; and

2) Nearly all remaining Snake River steelhead habitat is above eight major hydroelectric dams that deter migrations to and from the ocean.

However, neither of these justifications applies to the Thompson. Both it and the Fraser remain undammed. Unfortunately, once you accept hatch-

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eries, you leave the door wide open for dams. Hatcheries have continually enabled the lie of providing effective mitigation.

At present, the Thompson River has only two of the Four “H”s working against its wild steelhead population: damaged habitat (not lost habitat), and over-harvest. The former is related to agricultural development on the Deadman and the Nicola; the latter is due to incidental steelhead harvest during the commercial target on sockeye in the Fraser, combined with a growing concern toward Native fisheries that may target steelhead.

So why add a third “H” – a hatchery – that Thompson wild steelhead would have to compete with for survival? The restoration idea is to reduce the Four “H”s, not to increase them.

Concentration on hatcheries in the U.S. has perpetually bled funding for fish restoration efforts that would have been better spent in solving three basic problems:

- 1) Conserving and restoring fish habitat through a combination of: riparian land agreements or purchases; purchase or lease of water rights; providing agricultural aid for fencing and/or better grazing rotations; and aid for less damaging and more efficient irrigation systems (such as drip irrigation).
- 2) Development of efficient selective harvest methods for commercial fisheries that can target stronger stocks while protecting weaker stocks (traps, seine nets, fish wheels, etc.).
- 3) Tearing down dams or otherwise altering their operation to safely pass fish, both upstream and downstream, combined with investments in stimulating energy conservation and research toward alternative energy development.

In the U.S., once the commitment has been made to hatcheries, they have perpetually stolen the monetary resources that should have been spent to solve the very problems which would deny any need for hatcheries in the first place. Forty percent of all Bonneville Power

Administration funding for salmon and steelhead recovery on the Columbia/Snake River system goes to hatcheries, the single largest expenditure. But still the wild stocks continue in decline. Why? Because the primary investments have been made in perpetuating the problem rather than solving the problem. By 1997, three billion citizen dollars had been spent in the name of Columbia River Basin fish and wildlife restoration since 1981, primarily investing in a “solution” that was identified as a primary contributor to historic depletion of wild salmon and steelhead – the fish hatchery. It likely represents the single biggest conservation/restoration failure ever made on the planet.

Have there been *any* wild steelhead bright spots in the Columbia River Basin after restoration efforts began in 1981? Yes, there are important examples, but only at the subpopulation level of individual streams. One of those is Oregon’s John Day River. It is the only larger subbasin with a healthy wild steelhead population in the Columbia Basin. Some years it has had estimated run sizes of 30,000 to 40,000. Of significance, it is the only large Columbia subbasin that has never been planted with hatchery steelhead.

Joseph Creek is another bright spot. It is a tributary of the Grande Ronde River. Primarily in Oregon, Joseph Creek’s wild steelhead subpopulation is considered healthy (2,000 wild steelhead in better years) within the otherwise ESA-listed Snake River Basin ESU. Like the John Day, Joseph Creek has never been planted with hatchery steelhead. Joseph Creek steelhead must pass eight dams each way to the Pacific and back.

There is also the example of Washington’s Wind River, whose wild steelhead were among the most depleted in the ESA-listed Lower Columbia ESU. After years of hatchery steelhead releases begun in about 1960, the Wind River wild summer steelhead population fell to snorkel counts of only 40 fish at times in the 1990s — from historic run size estimates of 2,500 made in the early 1950s. In the latter 1990s hatchery steelhead releases were finally eliminated, and hatchery strays are trapped out of the system. The steel-

head have responded. For the first time in many years, Wind River will likely have a catch and release angling season in 2006. Escapement estimates of 500-1,000 wild steelhead have returned over the past five years.

It is no accident that these three wild steelhead success stories in the Columbia Basin have occurred in the absence of hatcheries. Unfortunately, the managers have yet to broadly apply similar strategies elsewhere due to a lot of vested interests in hatcheries by state, tribal, and federal agencies, combined with corporate businesses such as logging, agriculture, and real estate developers that prefer hatchery mitigation for degraded habitat rather than providing the habitat protections that any fish restoration requires.

Washington has more fish hatcheries than any state in the Union. The result has been 13 ESUs (each comprised of numerous individual subpopulations) of ESA listed salmon and steelhead that state, local, and federal governments are responsible for. Ten of these are in the Columbia Basin, where the greatest investments in hatcheries have occurred.

Puget Sound is the area of the state with the second greatest proliferation of hatcheries. Annual releases of about 500,000 steelhead hatchery smolts occur into both the Skagit and Snohomish systems alone. The Puget Sound steelhead ESU has recently been petitioned for ESA listing. There is compelling evidence on the Skagit that increased hatchery steelhead smolt releases are linked to its steelhead declines. Puget Sound steelhead will likely be listed as threatened due to their dramatic depletions in the past decade. When that occurs, nearly the entire state will be blanketed with listings.

This is some of the sorry history of the once prolific wild steelhead populations from the Lower 48, where business-as-usual economics have driven fishery management to continual investments in the lie of fish hatcheries. We provide a page from the book of fishery management that those looking for restoration of Thompson River steelhead would do well to tear out and put beneath the

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kindling of the next campfire.

Hatcheries have lived on the reputation of providing a decade or two of seeming increases in returns, but they invariably have failed as the wild populations plummet to levels lower than at any time in previous history. In effect, the end product is a virtual replacement of wild fish with hatchery fish followed by a continual long term decline of both, due to placing all of one's eggs in the hatchery basket rather than in protection of habitat. There is never enough money to adequately fund both. It boils down to an either/or.

The greatest single threat to steelhead is actually not even part of the previous argument beyond the fact that hatcheries always mask more primary problems. We have an increasingly looming fifth "H" – HEAT in the form of global warming that will be pushing all cold water fishes to the latitudes closest to the poles, or to mountain headwaters as resident populations disconnected from salt water elsewhere. This will pale anything we have yet seen regarding conservation of cold water fish.

We in the U.S. are the global worst-case citizens. We have twice voted for a government that has distanced us from the planet-wide responsibility to act on global warming. This is the same government that has embraced hatchery salmon and steelhead as effective replacements for wild fish in hopes of breaking the back of the Endangered Species Act and its restrictions on big business and unimpeded development and resource extraction. To date, we to the south deserve no name better than "Yank," and the fish hatchery is our appropriate symbol as a country of minimal values beyond the once mighty buck. Canadians can do better than our example.



## Proposed Mine Threatens ESA-Listed Salmon and Steelhead

By Ryan Hunter

— Gifford Pinchot Task Force —

*Last year, Idaho General Mines proposed a major mining operation on 3,000 acres of lands managed by the Bureau of Land Management and the U.S. Forest Service within Washington State, which potentially threatens a number of ESA-listed populations of salmon, steelhead and trout. Early this year, federal officials decided to move ahead with the formal process of preparing an Environmental Assessment for the lease. In the following article, Ryan Hunter, program director of the Gifford Pinchot Task Force, gives us an overview of the situation. He can be reached at 503-221-2102 ext. 5#, ryan@gptaskforce.org and www.gptaskforce.org.*

**T**he Mount St. Helens area is nationally recognized for its unique and significant recreational, scientific, and ecological features. A mining company out of Spokane, Washington, however, is proposing a 3,000 acre mine in the area that would harm this unique treasure in our own backyard.

Idaho General Mines Inc. is seeking a lease from the Bureau of Land Management and the U.S. Forest Service to mine for copper, gold, molybdenum, and silver on the south slope of Goat Mountain, which lies in the Green River valley just 12 miles north of Mount St. Helens' crater.

Much of the land the company wants to lease was purchased in 1986 by the Forest Service from the Trust for Public Lands using Land and Water Conservation Funds. These funds were intended by Congress to be used to purchase lands for recreation and conservation, not for mining.

The area under consideration for a lease also enters the Tumwater Inventoried Roadless Area, which would have been protected from this mining proposal by President Clinton's 2001 Roadless Rule, had President Bush not gutted the rule.

Mine development at Goat Mountain could have enormous impacts on the threatened salmon and steelhead populations in the Green River, the drinking water supplies of Kelso, Longview, and Castle Rock, old growth forest habitat, and numerous recreation destinations.

Salmon and steelhead populations of the Green River could be devastated by a chemical process that would occur following mining activity that would leach sulfuric acid and other toxic substances into surrounding water bodies. Once this chemical process begins it could persist for thousands of years. A dam that would need to be constructed to hold back stored waste material could fail in the seismically active region, releasing in a flash tons of toxic substances into the Green River. At least 20 miles of new road construction, moreover, would add smothering sediment to streams and rivers.

ESA-listed fish runs at risk include fall Chinook salmon (threatened), winter steelhead (threatened) and coho (under consideration for threatened status) on the Green River and winter steelhead (threatened) and coho and resident cutthroat trout (both sensitive) on Quartz Creek.

Any toxic substances released into the Green River would eventually flow down stream to the Cowlitz River where they could have serious implications for the drinking water supply of communities such as Kelso, Longview, and Castle Rock. Agricultural water users would have to cope with contaminated water supplies as well.

Given the composition of the ore in the area, mine development would almost certainly result in a large open pit mine. Old growth forest habitat and the species that rely on it would be destroyed in the construction of such a mine at Goat Mountain.

Developing a mine in the Green River valley would also impact recreation des-

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tinations such as the Goat Mountain Trail, the Green River Trail, and the Green River Horse Camp, a popular destination for backcountry horse enthusiasts. In close proximity are the Ryan Lake Picnic Area and Viewpoint, the Tumwater Mountain Trail, the numerous lakes in the Mt. Margaret backcountry in the Mount St. Helens National Volcanic Monument, and the trailhead for the Quartz Creek Big Trees Loop Trail, which leads hikers through an amazing stand of ancient forest. In fact, mine development could result in an open pit so deep that it impacts the ground water, altering the hydrology of the area in such a way so as to potentially dewater the popular lakes in the area.

If Idaho General Mines is successful in obtaining a lease from federal agencies, it could be the crucial first step they need to develop the 3,000 acre mine at Goat Mountain. Fortunately, we've learned about their proposal early in the process and have a real opportunity to stop it. But we can't do it without your help. Please take a moment and write a letter to decision makers at the BLM and U.S. Forest Service asking them not to grant Idaho General Mines a lease to mine Goat Mountain. Such a mine would be too costly to popular recreation areas, vulnerable fish populations, old growth dependent species, and other wildlife.



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## Legal Action Taken to Reinstate Fish Passage Center Budget

*An article in the September 2005 issue of The Osprey detailed the attempt by Idaho Senator Larry Craig to eliminate the Fish Passage Center by "zeroing-out" its budget, an effort many fish advocates believe was motivated by a desire to make solid scientific information about the impacts of the Columbia and Snake River dams on salmon and steelhead more difficult to obtain. Senator Craig was successful in his efforts, prompting a coalition of conservation organizations to file a lawsuit in an effort to restore funding for the center. The following article is an update provided by that coalition.*

**O**n January 23, 2006, Environmental and sport-fishing industry groups filed a legal action to keep intact the Fish Passage Center. The Center's experts provide analysis of fish runs and river operations to protect and enhance salmon, steelhead, bull trout and other fish moving through the Columbia and lower Snake rivers. The Fish Passage Center plays a critical role in monitoring whether native fish stocks are able to traverse a series of dams to reach their spawning grounds.

Late last year, Senator Larry Craig (R-ID) added language to a Congressional Committee report that the Fish Passage Center should no longer receive funding from the Bonneville Power Administration and the functions should be transferred to a private entity. The Center's figures were relied upon by a federal district court judge in ordering greater water releases from dams this past summer to aid salmon migration.

On December 8, 2005, the Bonneville Power Administration (BPA) issued a solicitation for another entity to perform "Key Functions previously performed by the Fish Passage Center." [Editor's Note: As this issue went to press, BPA announced that it will hire Pacific Northwest National Laboratory to take over the Fish Passage Center's functions] The legal petition, filed by Northwest Environmental Defense Center (NEDC), Public Employees for Environmental Responsibility (PEER) and the Northwest Sportfishing Industry Association (NSIA), asks the Ninth Circuit Court of Appeals to declare attempts by the BPA to replace the Fish Passage Center illegal, in violation of the provisions of the Northwest Power Act. Moreover, the groups argue that a Committee report does not carry the force of law.

"BPA is ignoring the program adopted to protect fish and mitigate impacts from hydropower operations," stated Stephanie Parent of the Pacific Advocacy Center, which filed the petition. "BPA cannot act unilaterally under the Northwest Power Act; it must involve the public and stakeholders."

While Craig has complained the Center engages in "advocacy science," the Center's reports are mathematical compilations of fish passage data. The Center's work is posted on its web site and available to all. "Senator Craig doesn't like the message inherent in the data reported by the Center, so he is trying to zero out the messenger," stated PEER Executive Director Jeff Ruch. "This type of political intrusion has a chilling effect on every expert employed by the federal government who honestly reports findings on any issue with potential political controversy."

"Sportfishing businesses and the many clients we serve rely heavily on the Center's information," said Liz Hamilton of NSIA. "BPA's action will disrupt data collection and threaten the quality and consistency of the information available."

"NEDC has worked for over thirty-five years to protect habitat for threatened and endangered fish stocks in the Columbia Basin," said Mark Riskedahl of NEDC. "We need to see the Fish Passage Center's work to continue."

You can find out more about the Fish Passage Center at [www.fpc.org](http://www.fpc.org).



### Chair's Corner, Continued from page 3

March of this year, so there is still time to make your voice heard in support of continuing this critical mission completely and independently from the action agencies.

### Steelhead and Rainbow Trout

And now the good news. NOAA Fisheries actually changed its mind for the better, and here's the story.

When NOAA Fisheries initially listed ten steelhead Evolutionarily Significant Units (groups of stocks of the same species in the same area) under the Endangered Species Act in the late 1990's, they decided that sea-run steelhead and resident rainbow trout in the same geographic area were to be grouped together in the same ESU. The logic for this was that they are the same species (*Oncorhynchus mykiss*) and that there is occasional spawning between the sea-run and resident forms. However, NOAA listed only the sea-run steelhead.

These listings and distinctions resulted in several actions being taken. First, two law suits were initiated, one by irrigators in the Central Valley California ESU and the second by development, agricultural, and local government interests in the Lower Columbia, Middle Columbia, and Upper Willamette ESU's. The suits requested de-listing of the steelhead based in large part on the presence of healthy numbers of resident rainbows in each of these ESU's, along with a previous court decision which the plaintiffs interpreted as requiring listing all or none of the fish in a given ESU.

Conservation and fishing organizations, including the Federation of Fly Fishers, Trout Unlimited, Pacific Rivers Council, and others, responded in two ways. First, they intervened on the side of the defendant, NOAA Fisheries, to protect the ESA listings. The first of these suits was decided in favor of continued listing based on uncertain science about steelhead/rainbow relationships. The second was put on hold pending completion of NOAA's policy decisions on steelhead

listings. Second, they petitioned NOAA Fisheries to place the sea-run and resident forms in separate "Distinct Population Segments" (DPS's) for ESA listing purposes, as specifically allowed by the Endangered Species Act. This separation is justified by the significantly different physical, physiological, ecological, and behavioral characteristics of the sea-run and resident life histories.

When it announced its new Hatchery Policy in June 2005, NOAA deferred its decisions on steelhead for six months. Then in November 2005 NOAA announced its draft and in December 2005 finalized its policy by dividing each of the ten listed ESU's into two DPS's, one for sea-run steelhead and one for resident rainbows.

Although conservation organizations presented and lobbied aggressively for the DPS separation, the change may have been caused more by an interagency turf spat between NOAA Fisheries and the U. S. Fish & Wildlife Service. USF&WS doesn't want NOAA Fisheries invading its responsibility for resident rainbow trout. Nevertheless, if this policy holds up in court in the face of likely legal action by the usual opponents of ESA protection, it is a major victory for ESA listed steelhead, eliminating the possibility that sea-run steelhead will be de-listed based on healthy populations of resident rainbows in the same geography. This in itself will not ensure the future of these fish. Habitat restoration and enlightened harvest and hatchery practices still

will be required; however, the legal teeth to enforce them should be strengthened.

We can not leave this subject without mentioning two remaining problems related to this much improved policy. First, the steelhead and rainbows of Southern California, due to severely degraded and hostile habitat and the very intermittent passage



NOAA Fisheries has decided that steelhead and resident rainbow trout should be regarded separately when reviewing the status of fish populations. Photograph by Jim Yuskavitch

between fresh and salt waters, are very much dependent on each other for continued survival. The resident form, as well as the sea-run form, should be ESA listed.

Second, as part of these late autumn 2005 decisions, NOAA downgraded the ESA listing of the Upper Columbia steelhead from Endangered to Threatened. This DPS is made up almost entirely of the Wenatchee, Entiat, Methow, and Okanogan/Similkameen tributaries of the Columbia. We believe this downgrading is a mistake, because the wild steelhead are so severely depressed and make up such a small percentage of the total steelhead population of this DPS. This is caused, in turn, by the migration problems created by the seven to nine dams in the main stem between the tributary mouths and the ocean.

The battle goes on.



**Columbia River Economics  
Continued from page 3**

Columbia River water. To implement restoration goals, water has to be purchased from those who control it.

“BPA planning does not budget to save money from good market and flow years for helping in bad years. ... The biggest salmon-restoration expense comes from the revenue impacts and purchase of power lost because of altered flows for migration. ... Low flows due to drought and poor power markets substantially increase this cost.

“While it is worthwhile knowing the relative costs of actions to protect salmon, NPPC fish and wildlife program and ESA biological opinion are held out as the major factor affecting ‘Pacific Northwest electric utility ratepayers.’ ... The impact of the drought and power markets are seldom mentioned in conjunction with the fish and wildlife costs. **The costs in lost power to provide water for irrigation, transportation, recreation, and flood control are not calculated. The primary purpose of the Columbia River system is assumed to be mainly hydropower production and related functions. Fish and wildlife requirements are judged from this perspective.**

“The costs allocated to the fish and wildlife program depend on how one sets priorities for water use. ... **If water flows for fish were given the highest priority, then hydropower generation would have to buy water allocated to fish rather than the reverse. ... These and many other assumptions, and estimated allocations make the costs frequently quoted highly subject to debate and discussion for the values implied in their calculation.**” (Boldface added for emphasis by editors)

So what are put forth by BPA as objective accounting numbers are really all about values. For BPA, the power value ranks first. Irrigation, transportation, recreation, and flood control are not charged for lost power revenue, so they come next. The fish come last and are charged for foregone power revenues.

Distorted! Dishonest! Pathetic! Unfair!

— Bill Redman



The Columbia River offers American citizens far more benefits that just hydropower. Photograph by Jim Yuskavitch



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We have always skated on thin financial ice, and will continue to do so. But without your support we fold up. The usual donation envelope is provided. Whatever you can afford will be much appreciated (and used wisely).

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